

## WEST INDIES HURRICANES.

THE SEASON FOR THESE TERRIBLE STORMS NOW AT HAND.

THEIR CAUSES AND PECULIARITIES—PROVISION BEING MADE BY UNCLE SAM FOR WARNING HIS NAVY IN CUBAN WATERS OF DANGER IN THE NEXT FEW WEEKS.

The Weather Bureau of the United States is about to establish a special service in the West Indies for the purpose of obtaining the earliest possible intimations of the approach of hurricanes in that part of the world, so that the most ample warning may be given to the ships of the American Navy which are likely to be exposed to the fury of these storms, and also to the American troops operating in that part of the world.

Weather disturbances of this particular type are the most severe known in human experience. Fortunately, they are infrequent and are confined almost exclusively to a short period—the latter part of summer and the early autumn. Thus, out of a large number on record, ten came as early as June, forty-two in July, ninety-six appeared in August, September produced eighty, October reported sixty-nine, and only seventeen were credited to November.

These storms are attributed by those who have studied the matter to abundance of vapor produced in tropical seas. Between the region in which the northeast trades prevail and that where the sailor encounters the southeast trades there is a belt of calms known as the "doldrums." This shifts north and south with the sun, and at the hottest part of the summer in

creases. Sometimes a hurricane from the West Indies covers an area five hundred miles across.

The path pursued by these storms is peculiar. When first discovered they are usually moving westward, or nearly so, not more than ten or twelve degrees north of the equator. But they soon show a tendency to swerve a little to the north, and either in the Gulf of Mexico or out on the coast of the South Atlantic States they recurve so as to travel northward and then northeastward. The sharpest turn is apt to occur in about latitude 25 or 30 degrees north. Sometimes this alteration in the course takes place far enough out at sea to bring the storm up near the Bermudas. In that case very little shipping is in its way. But if, as often happens, it sweeps along the coast of Georgia and the Carolinas, it is likely to be felt on the Jersey and Long Island shores to some extent, and then follow the steamship route to or toward Northern Europe.

During the earlier stages of its history one of these hurricanes advances very slowly, not more than about ten miles an hour, or 250 miles a day. When it is changing its course from northwestward or northeastward, it may travel even more slowly. But after it once gets started up the coast it may move fifteen or twenty miles an hour.

The progressive motion of the whole system, though, must not be confounded with the velocity with which the winds of this mighty whirl blow around the centre, the calm centre, of the storm. From seventy-five to a hundred miles an hour is the ordinary speed of the wind in the storm of this type, outside of the "eye." And even greater velocities are not uncommon. Only the stoutest ships, with plenty of sea room and the most skilful navigation, can hope to survive an ordeal like this. Besides the direct

and Truxillo, on the continent, and Havana, Santiago, Kingston and St. Thomas, in the archipelago. It is now proposed to send men from this country to Cape Haytien (on the north side of Hayti), some southern port of San Domingo, to Santiago, Puerto Principe and Cienfuegos, in Cuba; Curacao, Barranquilla and Colon, in South America, and to five of the Windward Isles—St. Kitts, Guadalupe, Martinique, Barbadoes and Trinidad. Very much the same observations (of temperature, pressure, humidity, rainfall and wind force) will be made at these points as are made at the regular stations within the limits of the United States.

The weather conditions are to be reported by telegraph every morning to the headquarters of the special service, which at first may be at Cape Haytien, but later will be transferred either to Santiago or Key West. Here an expert from Washington will study the data carefully, and when there are signs of a storm send prompt warning to all military and naval forces in that region. In some years the number of genuine hurricanes is half a dozen, and in others not more than one or two are observed. But he they abundant or scarce this year, Uncle Sam will maintain a watch for them such as he has never before undertaken.

## INDIAN TIGER HUNTING.

HOW "STRIPES" IS TRACKED TO AND TRAPPED IN THE JUNGLE.

From Outing.

A buffalo calf, or "hela," as the inhabitants call it, is fastened by the leg in the usual path of the tiger, so that the next time he passes that way he may find a meal ready to his mouth.

Early next morning the place is visited, and if "Stripes" has risen to the occasion it sometimes happens that he is found finishing his

## GRIDLEY'S RESTING-PLACE.

HISTORICAL ASSOCIATIONS OF LAKE-SIDE CEMETERY AT ERIE, PENN.

Erie, Penn., July 16.—When Captain C. V. Gridley got up from a bed of sickness on that May morning at Manila Bay when he took his place in the conning tower and nobly fought the gallant Olympia from start to finish of that day, remaining on duty constantly for twenty-four hours, he as truly gave up his life to the call of duty and of his country as if he had been struck down by an enemy's shell. He never rallied from the fatigue of that exhausting duty, and when invalided and sent home died on the way.

The funeral services really began here last Sunday, although the ashes did not arrive from San Francisco, where they had been brought from Yokohama on the steamer Rio de Janeiro, until Tuesday. Captain Gridley had been senior warden of his church, St. Alban's Episcopal Parish, Erie, and had been a member of the Brotherhood of St. Andrew. On Sunday morning at 8:30 o'clock the local chapter of the brotherhood held a service of commemoration when the Rev. Father H. H. Bogert, of Waterford, Penn., was the celebrant. The brotherhood made their corporate communion, and the services were largely attended; the Misses Katrina and Ruth Gridley, Captain Gridley's daughters, being present, as well as his only son, John P. V. Gridley.

Lakeside Cemetery, where the ashes of the gallant commander were laid for their last rest, is on a bold bluff three-quarters of a mile east of the city, on the shores of Lake Erie. Erie, on the lake of the same name, stretches for several miles along the shore, for two-thirds of its front protected by the peninsula of Presque Isle, which forms the harbor. East of the harbor entrance the bluffs rise precipitously to a height of from sixty to one hundred feet.

On the plateau which stretches back from the shore of this inland sea lies Lakeside Cemetery, "beautiful Lakeside," the townspeople call it, and surely no spot ever needed less of the art of the landscape gardener than this. Divided in almost its centre by a rugged depression called Presque Isle Glen, with its Eagle Point, its fair drives and walks, its noble monuments of which the one to be raised to the lamented Gridley will be the noblest, and with its outlook on meadow and field and orchard in the rear stretching back to the blue hills that guard the lake shore, it is its front, its outlook on the lake, that gives this resting-place of weary human nature its chief charm.

As one stands at the circle dedicated to the memory of Captain Gridley and looks westward the view takes in many places of more than a mere passing historic interest. In the immediate foreground, a mile away, but rising plainly and seeming almost "next door" in the clear air, is the Pennsylvania Soldiers and Sailors' Home, the abiding-place of more than six hundred of Pennsylvania's defenders in the Civil War, with its high flagstaff and Old Glory apeak. A little further east is a reminder of times more remote than even proper American history, for there at the foot of Parade-st. the French fort ruins are visible, where the Grenadiers made one of their stations in the series of posts that stretched from the St. Lawrence to the mouth of the Mississippi.

The blockhouse where "Mad Anthony" Wayne, of Revolutionary memory, made his headquarters and died, with his grave, from which the body was afterward removed and taken to Chester, still preserved and shown, stands on the Soldiers' Home grounds. Further north, just inside the entrance to Presque Isle Bay, or the harbor of Erie, the shore of the surrounding peninsula makes a deep indentation. This bay is the resting-place of Commodore Perry's squadron, which was sunk there many years after the War of 1812 closed. School children do not need to be reminded that at the port of Erie Commodore Perry built his fleet; from that port he sailed to meet the British, and to that port his victorious squadron returned.

The Navy Department offered the family of the late Captain Gridley a place for his ashes in Arlington next to the resting-place of Admiral Porter. The citizens of his adopted home—none the less dear to him as the place where he was able to retire when the duties of the service permitted, the home of his wife and the birthplace of his children—his townspeople, would not hear of his burial elsewhere. There seemed a singular appropriateness in his sepulture by Lake Erie. The historic associations were not all. For many years while on the United States ship Michigan, whose station and winter quarters are at Erie, did Captain Gridley sail the lakes, passing and repassing in and out of the entrance to Erie Harbor, and for two tours of duty after reaching the appropriate grade he was in charge of the lighthouse service on the lower lakes, detailed to this duty by the Navy Department, as is customary, although the service is directly under control of the Treasury Department.

A public movement on the part of many wealthy and patriotic citizens offered the site for the grave to Mrs. Gridley, and is now providing funds for a monument. The president of the Lakeside Cemetery Association is H. C. Du Val, of New-York City, and the controller and manager is William H. Platt, of Erie. The cemetery managements afforded every assistance to the committee in selecting the site. The grave will be in a circle containing forty-three hundred square feet, and will lie east and west.



## WHERE CAPTAIN GRIDLEY LIES.

View of the shore of Lake Erie from Presque Isle Glen, looking west. The grave is on top of the bluff in the centre of the picture.

the Northern Hemisphere lies near the tenth parallel of north latitude. As the trades do not aim directly for the equator, but diagonally, they tend to force the surface water of the ocean toward the western part of the doldrums in the Atlantic. And though the highest sea temperatures of the season are observed a few weeks later than the most extreme air temperatures, yet the doldrums are a steaming caldron from June until October.

A good deal of the hot water from this long, narrow reservoir—in fact, most of it—is forced through the Windward Isles into the Caribbean Sea and Gulf of Mexico, and then appears at the Florida Strait as the Gulf Stream. But a portion of it has been converted into vapor in the mean time, and this is the chief agent in the development of the most appalling storms that man has ever encountered.

It is easy to see from these facts why the hurricane appears where it does, and when it does. Sometimes only a vague, imperfectly organized disturbance crosses the chain of the Windward Isles, which stand like sentinels off to the east of the Greater Antilles, and only after it has drifted into the Caribbean does the storm increase in fury sufficiently to be a cause of dread. On the other hand, it may arrive at Martinique or St. Thomas a full-fledged cyclone, and its havoc in that part of the West Indies may perhaps be greater than further west.

When the attendant winds are severe the barometer falls at the centre of the storm, but if the disturbance is not fully formed the barometer gives only indecisive warnings. Moreover, the storm early in its history is narrow—not more than fifty or a hundred miles in diameter, perhaps. It may come through the Windward Isles, therefore, without being detected unless a strict watch is kept. Only an expert can recognize the earliest premonitions of such a storm. Afterward the diameter slowly in-

creases. Sometimes a hurricane from the West Indies covers an area five hundred miles across. The path pursued by these storms is peculiar. When first discovered they are usually moving westward, or nearly so, not more than ten or twelve degrees north of the equator. But they soon show a tendency to swerve a little to the north, and either in the Gulf of Mexico or out on the coast of the South Atlantic States they recurve so as to travel northward and then northeastward. The sharpest turn is apt to occur in about latitude 25 or 30 degrees north. Sometimes this alteration in the course takes place far enough out at sea to bring the storm up near the Bermudas. In that case very little shipping is in its way. But if, as often happens, it sweeps along the coast of Georgia and the Carolinas, it is likely to be felt on the Jersey and Long Island shores to some extent, and then follow the steamship route to or toward Northern Europe.

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harm wrought by these hurricanes on the ocean, there are often serious indirect consequences, such as the destruction of life and property on shore as a result of tidal waves or banked-up waters. Galveston, New-Orleans, Savannah and Charleston have suffered repeatedly and severely in this manner. Closely akin to the hurricane of the West Indies is the typhoon of the Asiatic coast. This is due to the same causes, and develops in the doldrums of the Western Pacific. Sometimes the storm comes in from the east across the Philippines, which occupy a geographical position with relation to the Chinese Empire similar to that of the West Indies to the United States. Sometimes the typhoon is first noticed in the China Sea, which corresponds to the Caribbean Sea. But in any case the storm track is a curved one, and after making all the mischief it can in low latitudes the typhoon is likely to scour the coast of the continent and of Japan, and then, if its fury is not entirely exhausted, follow the great analogue of the Gulf Stream up the Pacific toward Alaska. The season for the typhoon is the same as that for the West Indies storm.

In the Bengal Bay and the Arabian Sea, northward extensions of the Indian Ocean, similar storms are produced in the late summer and early autumn. The South Indian Ocean also experiences these visitations in what is there the hot season—January, February and March. The South Pacific, too, has cyclones of the same character during these months. The historic storm that devastated Samoa and wrecked a number of naval vessels in 1889 occurred in March. For several years the United States has been able to get reports from a few local observers in the West Indies, Mexico and Central America for a few weeks at a time. These stations are Vera Cruz, Coatzacoalcas, Merida, Valladolid

breakfast, when matters are greatly simplified by potting him. Usually, however, he is found to have eaten what he wanted, washed it down with a long drink from some neighboring pool and gone to sleep off the effects of his heavy meal in some cool and shady spot.

Next the exact whereabouts of this spot is "ringed"—that is to say, his "pugs," or foot-prints, are followed, frequent casts being made round what appear to be likely places.

In this way, given a reasonable amount of luck and fairly impressionable ground, the tiger can be located to within a small area, for, if pugs are seen to enter any particular piece of jungle and no tracks can be found leaving it, it follows that "Stripes" is probably inside.

A number of men, varying in accordance to the size of the jungle to be beaten, are next collected from the various villages in the neighborhood and arranged round what is considered a triangle, the sides of which are represented by lines of men in trees to act as "stops" and the base by the beaters proper, armed with axes, sticks, tamtams (native drums) or anything else they can get hold of calculated to make a noise.

Through the apex of the triangle the path passes, which it is considered the tiger will probably take on being disturbed, and it is here that the gun or guns station themselves. Should the tiger take a path different from the one he is expected by it is so arranged that he must come in contact with the stops, whose duty it is, by breaking a twig, gently clapping the hands or coughing, to prevent the tiger from breaking out of the side of the triangle.

The beaters proper simply walk through the jungle, either shouting and making a noise or merely tapping sticks together, according to the tiger one has to deal with.

A savage old tiger, one which has been already beaten over, will on hearing a great noise almost invariably break back and charge through the line, whereas if the disturbance appears to be caused merely by people cutting wood or gathering sticks he will in all probability move on very quietly.

## SWEDISH PHILOSOPHY.

From The Denver Times.

If every von would tend somebody else's business only ven hae es hired to et would leave gute many yobs open.